(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
17 February 2005 (17.02.2005)

PCT

(10) International Publication Number
WO 2005/014894 A1

(51) International Patent Classification[7]: C25D 11/18, 13/20

(21) International Application Number: PCT/CA2003/001176

(22) International Filing Date: 6 August 2003 (06.08.2003)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant *(for all designated States except US)*: **DECOMA INTERNATIONAL INC.** [CA/CA]; 50 Casmir Court, Concord, Ontario L4K 4J5 (CA).

(72) Inventors; and
(75) Inventors/Applicants *(for US only)*: **BRADFIELD, Craig** [CA/CA]; 567 Willowick Drive, Newmarket, Ontario L3X 2A6 (CA). **CHEVALIER, Gary, F.** [CA/CA]; 3 Concorde Place, Unit 2801, Don Mills, Ontario M3C 3K7 (CA). **ROOPNARINE, Ramdeo** [TT/CA]; 1643 Warren Drive, Mississauga, Ontario L4W 2X1 (CA). **JENKINS, Scott** [CA/CA]; 94 Trefusis Street, Port Hope, Ontario L1A 4J2 (CA).

(74) Agents: **IMAI, Jeffrey, T.** et al.; Magna International Inc., 337 Magna Drive, Aurora, Ontario L4G 7K1 (CA).

(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

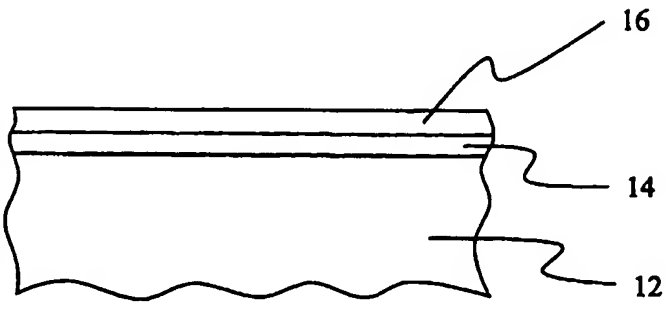
(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 2005/014894 A1

(54) Title: PROTECTIVE COATING FOR AUTOMOTIVE TRIM PIECES AND METHOD OF MAKING THE SAME



(57) Abstract: The invention provides a method of providing a protective coating on a surface of an aluminum article, such as exterior automotive trim pieces. An anodized coating is provided on the surface of the aluminum article. The pores of the anodized coating are then sealed. A thermosetting cationic acrylic resin is electrocoated over the anodized coating. The thermosetting cationic acrylic resin is thermally cured. The anodized coating has a sufficient degree of softness such that the curing of the thermosetting cationic acrylic resin maintains a continuous anodized coating and does not cause a formation of fractures. The anodized coating is provided at a temperature between about 20 to 30°C, at a voltage of about 10 to 15V, and at an electrolyte concentration of about 10 to 15% by volume. The thermosetting cationic acrylic resin includes a UV stabilizer. If desired, an electrolytic coloring step is performed prior to sealing the pores of the anodized coating.

Abstract

The invention provides a method of providing a protective coating on a surface of an aluminum article, such as exterior automotive trim pieces. An anodized coating is provided on the surface of the aluminum article. The pores of the anodized coating are then sealed. A thermosetting cationic acrylic resin is electrocoated over the anodized coating. The thermosetting cationic acrylic resin is thermally cured. The anodized coating has a sufficient degree of softness such that the curing of the thermosetting cationic acrylic resin maintains a continuous anodized coating and does not cause a formation of fractures. The anodized coating is provided at a temperature between about 20 to 30° C, at a voltage of about 10 to 15V, and at an electrolyte concentration of about 10 to 15% by volume. The thermosetting cationic acrylic resin includes a UV stabilizer. If desired, an electrolytic coloring step is performed prior to sealing the pores of the anodized coating.